

AGRI 3030: Innovations in Agriculture (Fall 2020)

Syllabus

Instructor

Charles Grant, PhD, PAg
Chair of the Agribusiness Program
Senior Instructor
374 Agriculture Building
Department of Agribusiness and Agricultural Economics
Faculty of Agricultural and Food Sciences
charles.grant@umanitoba.ca

Office hours

By appointment

Course Description

A general description is as follows:

This is a course where students study innovations and agriculture and contemplate the digital future of foods. Students learn a working knowledge of Microsoft Excel and Python coding as applied to agricultural automation.

Learning Outcomes

Upon completion of this course students should be able to:

- Demonstrate a working knowledge of Microsoft Excel as applied to agriculture;
- Demonstrate a working knowledge of Python as applied to agriculture;
- Demonstrate a knowledge of innovations in agriculture and the digital future of foods;
- Develop a framework for analysis for a digital innovation in agriculture.

Course Materials

- Instructions and readings posted on UM Learn;
- Computer;
- Internet connection;
- Microsoft Excel (comes with Office 365 which is part of your university registration);
- Python (open source and free);
- PyCharm IDE (open source and free).

Topics

- Microsoft Excel applications for agricultural automation;
- Python programming applications for agricultural automation;
- Framework for analysis for an agricultural innovation.

Exercises

There are three exercise each made up of multiple components. Complete all components of each exercise and submit to UM Learn.

Exercise 1 – Basic Python programming for agricultural applications – Part 1, Assignment 1: Agricultural Pivot Tables, Basic Python programming for agricultural applications – Part 2, Assignment 2: Optimization

Exercise 2 – Basic Python programming for agricultural applications – Part 3, Assignment 3: Moving agricultural data from Python to Excel, Basic Python programming for agricultural applications – Part 4, Assignment 4: Agricultural applications of the Pandas library

Exercise 3 – Develop a framework for analysis of an agricultural innovation and complete the framework for a particular innovation. The Lean Canvas for Bell IoT can be used as a template. The framework will be presented to the class

Exercise Submission

Exercises are to be submitted to UM Learn. The various parts of the exercises are to be bound up in a single PDF file for each exercise for submission. Multiple files will not be graded so be sure to bind up all of the relevant files for each exercise into a single PDF file.

Late exercises are docked 15% per day late with a two-hour grace period, without exceptions.

Evaluation and Grading

Exercise 1 – Basic Python programming for agricultural applications – Part 1, Assignment 1: Agricultural Pivot Tables, Basic Python programming for agricultural applications – Part 2, Assignment 2: Optimization	30%
Exercise 2 – Basic Python programming for agricultural applications – Part 3, Assignment 3: Moving agricultural data from Python to Excel, Basic Python programming for agricultural applications – Part 4, Assignment 4: Agricultural applications of the Pandas library	30%
Exercise 3 - Develop a framework for analysis of an agricultural innovation and complete the framework for a particular innovation. The Lean Canvas for Bell IoT can be used as a template. The framework will be presented to the class.	40%
Total	100%

Assignment Due Dates

- Exercise 1 Due Fri Oct 30 2020 at 11:59 PM
- Exercise 2 Due Fri Dec 4 2020 at 11:59 PM
- Exercise 3 Due Fri Dec 11 2020 at 11:59 PM

Grade Assignment

Percentage out of 100	Letter Grade
95-100	A+
86-94	A
80-85	B+
72-79	B
65-71	C+
60-64	C
50-59	D
Below 50	F

Examination

There is no examination for this course.

Plagiarism, cheating, and examination impersonation

You should acquaint yourself with the University's policy on plagiarism, cheating, and examination impersonation as detailed in the General Academic Regulations and Policy section of the University of Manitoba *Undergraduate Calendar*. Note: These policies are also located in your *Distance and Online Education Student Handbook* or you may refer to Student Affairs at <http://www.umanitoba.ca/student>.

Academic Supports Available to Students

Writing and Learning Support

The Academic Learning Centre (ALC) offers services that may be helpful to you throughout your academic program. Through the ALC, you can meet with a learning specialist to discuss concerns such as time management, learning strategies, and test-taking strategies. The ALC also offers peer supported study groups called Supplemental Instruction (SI) for certain courses that students have typically found difficult. In these study groups, students have opportunities to ask questions, compare notes, discuss content, solve practice problems, and develop new study strategies in a group-learning format.

You can also meet one-to-one with a writing tutor who can give you feedback at any stage of the writing process, whether you are just beginning to work on a written assignment or already have a draft. If you are interested in meeting with a writing tutor, reserve your appointment two to three days in advance of the time you would like to meet. Also, plan to meet with a writing tutor a few days before your paper is due so that you have time to work with the tutor's feedback.

These Academic Learning Centre services are free for U of M students. For more information, please visit the Academic Learning Centre website at:

<http://umanitoba.ca/student/academiclearning/>

You can also contact the Academic Learning Centre by calling 204-480-1481 or by visiting 205 Tier Building.

University of Manitoba Libraries (UML)

As the primary contact for all research needs, your liaison librarian can play a vital role when completing academic papers and assignments. Liaisons can answer questions about managing citations, or locating appropriate resources, and will address any other concerns you may have, regarding the research process. Liaisons can be contacted by email or phone, and are also available to meet with you in-person. A complete list of liaison librarians can be found by subject: <http://bit.ly/WcEbA1> or name: <http://bit.ly/1tJ0bB4>. In addition, general library assistance is provided in person at 19 University Libraries, located on both the Fort Garry and Bannatyne campuses, as well as in many Winnipeg hospitals. For a listing of all libraries, please consult the following: <http://bit.ly/1sXe6RA>. When working remotely, students can also receive help online, via the Ask-a-Librarian chat found on the Libraries' homepage: www.umanitoba.ca/libraries.

For 24/7 mental health support, contact the Mobile Crisis Service at 204-940-1781.

Student Counselling Centre

Contact SCC if you are concerned about any aspect of your mental health, including anxiety, stress, or depression, or for help with relationships or other life concerns. SCC offers crisis services as well as individual, couple, and group counselling. *Student Counselling Centre*: <http://umanitoba.ca/student/counselling/index.html>
474 University Centre or S207 Medical Services
(204) 474-8592

Student Support Case Management

Contact the Student Support Case Management team if you are concerned about yourself or another student and don't know where to turn. SSCM helps connect students with on and off campus resources, provides safety planning, and offers other supports, including consultation, educational workshops, and referral to the STATIS threat assessment team.
Student Support Intake Assistant <http://umanitoba.ca/student/case-manager/index.html>
520 University Centre
(204) 474-7423

University Health Service

Contact UHS for any medical concerns, including mental health problems. UHS offers a full range of medical services to students, including psychiatric consultation.

University Health Service <http://umanitoba.ca/student/health/>

104 University Centre, Fort Garry Campus

(204) 474-8411 (Business hours or after hours/urgent calls)

Health and Wellness

Contact our Health and Wellness Educator if you are interested in information on a broad range of health topics, including physical and mental health concerns, alcohol and substance use harms, and sexual assault.

Health and Wellness Educator <http://umanitoba.ca/student/health-wellness/welcome.html>

Katie.Kutryk@umanitoba.ca

469 University Centre

(204) 295-9032

Live Well @ UofM

For comprehensive information about the full range of health and wellness resources available on campus, visit the Live Well @ UofM site:

<http://umanitoba.ca/student/livewell/index.html>

A notice with respect to copyright

All students are required to respect copyright as per Canada's *Copyright Act*. Staff and students play a key role in the University's copyright compliance as we balance user rights for educational purposes with the rights of content creators from around the world. The Copyright Office provides copyright resources and support for all members of the University of Manitoba community. Visit <http://umanitoba.ca/copyright> for more information.

Your rights and responsibilities

As a student of the University of Manitoba you have rights and responsibilities. It is important for you to know what you can expect from the University as a student and to

understand what the University expects from you. Become familiar with the policies and procedures of the University and the regulations that are specific to your faculty, college or school.

The [Academic Calendar](http://umanitoba.ca/student/records/academiccalendar.html) <http://umanitoba.ca/student/records/academiccalendar.html> is one important source of information. View the sections *University Policies and Procedures* and *General Academic Regulations*.

- If you have questions about your grades, talk to your instructor. There is a process for term work and final grade appeals. Note that you have the right to access your final examination scripts. See the Registrar's Office website for more information including appeal deadline dates and the appeal form <http://umanitoba.ca/registrar/>
- You are expected to view the General Academic Regulation section within the Academic Calendar and specifically read the Academic Integrity regulation. Consult the course syllabus or ask your instructor for additional information about demonstrating academic integrity in your academic work. Visit the Academic Integrity Site for tools and support <http://umanitoba.ca/academicintegrity/> View the Student Academic Misconduct procedure for more information.
- The University is committed to a respectful work and learning environment. You have the right to be treated with respect and you are expected conduct yourself in an appropriate respectful manner. Policies governing behavior include the:

Respectful Work and Learning Environment

http://umanitoba.ca/admin/governance/governing_documents/community/230.html

Student Discipline

http://umanitoba.ca/admin/governance/governing_documents/students/student_discipline.html and,

Violent or Threatening Behaviour

http://umanitoba.ca/admin/governance/governing_documents/community/669.html

- If you experience Sexual Assault or know a member of the University community who has, it is important to know there is a policy that provides information about the supports available to those who disclose and outlines a process for reporting. The Sexual Assault policy may be found at:

http://umanitoba.ca/admin/governance/governing_documents/community/230.html

More information and resources can be found by reviewing the Sexual Assault site

<http://umanitoba.ca/student/sexual-assault/>

- For information about rights and responsibilities regarding Intellectual Property view the policy http://umanitoba.ca/admin/governance/media/Intellectual_Property_Policy_-_2013_10_01.pdf

For information on regulations that are specific to your academic program, read the section in the Academic Calendar and on the respective faculty/college/school web site

<http://umanitoba.ca/faculties/>

Contact an Academic Advisor within our faculty/college or school for questions about your academic program and regulations <http://umanitoba.ca/academic-advisors/>

Student Advocacy

Contact Student Advocacy if you want to know more about your rights and responsibilities as a student, have questions about policies and procedures, and/or want support in dealing with academic or discipline concerns.

<http://umanitoba.ca/student/advocacy/>

520 University Centre

204 474 7423

student_advocacy@umanitoba.ca

Copyright © 2020. Charles Grant.

All rights reserved. No part of the material protected by this copyright may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or otherwise without the prior written permission from the copyright owner.